Accentual Adaptation in North Kyungsang Korean* Michael Kenstowicz (MIT) and Hyang-Sook Sohn (Kyungpook National University) June 2000 (to appear in Ken Hale: A life in language. Michael Kenstowicz, ed. MIT Press The North Kyungsang (NK) dialect of Korean is a pitch accent system in which one or in certain cases two syllables in every freestanding lexical item are the locus of a pitch peak. The position of the accent is in general unpredictable: whitness the minimal triple k嘽i 'kind', kac 'eggplant', k :c 'branch'. When foreign words are adapted into this dialect of Korean, they must be assigned a pitch peak. Since any syllable of the word can be accented in the native lexicon, one might expect the accent of the donor language (typically English) to be copied more or less faithfully. It therefore comes as a surprise that this is not what happens. Instead, accent is assigned to one of three locations (initial, penultimate, or final) according to general principles. We have collected a corpus of some 600 words; the vast majority have predictable accent. We are aware of one other comparable finding. Shinohara (1997a,b, 2000) has investigated the locus of accent in Japanese adaptations of words from English and French. As is well known, nouns (as opposed to verbs) in Japanese contrast the locus of accent: for an n syllable noun, there are n+1 patterns as witnessed by the series i課oti 'life', koko誶o 'heart', atama 説ead, miyako 'capital city' (cf. miyako-ga) from McCawley 1965. Shinohara finds that when a word is adapted from English, the locus of the English accent is by and large respected; but words adapted from French follow a quite different path. Their accent is assigned according to the Latin stress rule: the final syllable is disregarded and a bimoraic trochaic foot is placed at the right edge of the remainder. The result is that the antepenult is accented if the penult is light; otherwise, the penult is accented: masi誯uri < m塩hicoulis, aNta誑dju < entendu. This "default" accent pattern is also regularly applied to limited sectors of the native vocabulary such as certain compounds and proper names. Our findings for NK are similar to Shinohara's for Japanese: a bimoraic trochee is assigned at the right edge of the word (with no extrametricality). But this generalization is overlaid by another, NK-specific pattern (detailed below). Shinohara's study and comparable results from our investigation pose an interesting theoretical problem: given that the native words the NK-learning child hears in first language acquisition have unpredictable accent, why is the right-edge oriented bimoraic foot analysis chosen in the adaptation situation? What evidence could lead the child to discover penultimate accent as the default accent so that this is the accentuation that emerges in the adaptation process?Why is the place of accent in English by and large respected in Japanese adaptations but not in NK adaptations? Or is what happens in adaptation largely independent of the native system and a more direct reflection of Universal Grammar (UG)? If so, are there other factors about NK (and Japanese) that cue a trochaic foot at the right edge of the word as the "default" accentuation? These are some of the questions that our results lead us to pose for future research. This paper is organized as follows. In section two we outline the accent patterns of the native NK lexicon. We then review N.J. Kimi (1997) arguments that penultimate accent should be singled out as predictable. In the following section we present the results of our study and the principles that govern the location of accent in the adaptation data. We then discuss three aspects of the segmental phonology of NK that impinge on the analysis in various ways. Next we examine several alternations that are suspended in adapted forms under the influence of the citation form. In the final section we see that adaptations corroborate a constraint on input items. The paper concludes with a summary of the results. 1. NK Accent Patterns In (1), we list noun stems of one to three syllables to demonstrate the point that accent falls unpredictably on any syllable of the stem in the native vocabulary. The data is tabulated in terms of "doubled-" versus "single-" accent words. Items in the former category have a pitch peak (high tone over their first two syllables; items in the latter category have a pitch peak over just one syllable. The doubled- versus single- accent contrast even exists for monosyllables: it shows up when a suffix such as the nominative -i is added. In the transcriptions that follow gemination marks tense (glottalized) consonants, Ch marks an aspirated stop, N stands for the velar nasal, U stands for the high central vowel and A for the mid central vowel. For most NK speakers the contrast between U and A is neutralized phonetically. Our transcriptions do not indicate the automatic voicing of intersonorant plain stops and the palatalization of s before i. (1) s m渓 'water' (cf. m渞- nom.) s渓 'wine' (cf. s渞-i nom.) ss c噆 誌elf k :m 'picture' s :r噈 'person' k嘽i 記ind kac 'eggplant' m噉Ul 'garlic' nam渓 'vegetable' k渒si 'noodle nemp 詐ot' yA玞un name toNs嶯 ' 'palanguin' k 抮抦 younger sibling sss m渃択e 'rainbow' h :r嘚i 'tiger' h噐巔i 'grandfather' k :k渕a 'sweet potato' k噈ani 'rice bag' kur渕a 'cart' satar 'ladder' t梜suli 'eagle' camc噐i 'dragonfly' mint ill 'dandelion' pit渓ki 'dove' pusirA玬 'abscess' halm嘚ku 'old woman' pilumpp噆 'wall' It is quite clear that whether a word belongs to the doubled class or not -- and if not, then which syllable of the word is accented -- is in general unpredictable. However, this statement must be qualified by the fact that words in which the first syllable contains a long vowel are systematically assigned to the doubled accent class (Chung 1991:99). Furthermore, aside from a handful of cases in which a long vowel appears on the final syllable of the stem, long vowels are restricted to the word initial syllable in the NK native lexicon--a property that is true for the Seoul dialect as well (Ahn 1998:68). But the doubled-accent class also contains many words with an initial short vowel: s \ddagger ird (cf. s -k nom.), c^m \ddagger \ddagger leff. For words in the single accent class, accent falls unpredictably on the first, second, or third syllable. However, N.-J. Kim (1997) presents several arguments that penultimate accent is the regular pattern for words without a long vowel. First, he cites a sample of 34 loanwords, 30 of which have penultimate accent; the remaining 4 have a final syllable with a long vowel which takes the accent (2). These data are consistent with an analysis that assigns a bimoraic foot at the right edge of the word.[1] (2) k挾ha 'guitar', th巏si 'taxi', th棶hAn 'token coin' pur嘽a 'brassiere', was扤thon 'Washington', then担U 詔ennis amer択ha 'America', hiros抦 a 'Hiroshima' khelliphon抋 'California', parUsell梟a 訠arcelona ut :N 'Japanese noodle', ot :N 'Japanese-style sausage' Our more extensive corpus of adaptations (see below) shows that this interpretation, while essentially correct, is an oversimplification. Second, as Chung (1991:74) observes, native NK stems longer than three syllables consistently have penultimate accent. Most of these terminate in the vowel -i (mikkur嘽i 'mudfish', ttakttak消i toothpick', acup噉im 'elder brother-in-law'). Chung refers to a similar state of affairs 'woodpecker', hepar噆i 'sunflower') but not all do so (isus択e in Kimatuumbi (Odden 1996) where the number of accent patterns for words with four syllables or more is severely restricted compared with the number of shorter words. Evidently, accentual contrasts have a secondary status compared with segmental contrasts, perhaps because the primary function of the former is prosodic integration. Third, as also observed by Chung (1991:85), when words vacillate in accent pattern, one variant is always penultimate: t ~ toks消i 'eagle', therep ~ ther巔i 'TV' (Japanese), m渃択e ~ muc択e 'rainbow'. In other words, penultimate accent acts like a magnet that attracts lexical items from the initial, final, and doubled classes. Fourth, stems with final accent shift the accent to the right under suffixation/encliticization: the shifted accent is realized on the penultimate syllable of the enclitic unless the final syllable contains a long eggplant' but kaci-meNk消o 'like an eggplant', kaci-pot : 'than an eggplant'. Finally, penultimate accent is the most frequent type in the cf. kac shorter native stems: out of 218 polysyllabic nouns in N.-J.Kim's sample, 133 (61%) have penultimate accent; out of 107 polysyllabic verbs, 52 (49%) are in the penultimate class. These results are comparable to our own: in our corpus of adaptations, 60% of the items belong to the penultimate class; the remaining 40% are divided almost equally between the doubled- and final-accent classes. 2. The Corpus Our corpus consists of some 600 items--almost all nouns. Shinohara (1997b) distinguishes between 襬n-line adaptations and 襩oanwords. The former are more or less spontaneous renderings of a foreign word in the target language -- for example when an interpreter must pronounce a foreign word such as a name for a monolingual client. Our data for the most part fall between fully integrated loanwords and novel renditions of foreign words: the corpus consists of words the second author has either adapted herself or heard used by other NK speakers either in Korea or in the United States. As far as accent is concerned, on-line adaptations and more fully integrated borrowings seem to be trated the same way. See Paradis & LaCharit (1997) for cases where this distinction is crucial. We begin with several preliminary observations. First, the adapted word almost always falls into one of the three NK accent classes: doubled, final, penultimate. There are cases of antepenultimate accent, but these are limited to situations where a final cluster is broken by two epenthetic vowels (see 3.3). Second, assignment to the three accent classes is made on a principled basis according to the weight of the relevant syllables. The basic generalization can be stated in terms of the disjunctions in (3). (3) a. If the initial syllable of the output is heavy, then the word falls into the doubled-accent class;. Otherwise, if the final syllable is heavy, the word falls into the final-accent class. c. Otherwise, the word falls into the penultimate class. In terms of weight, the hierarchy of syllable rimes in (4) is relevant. (4) V: > VCson > VCobstr > V > Vepen 2.1 Doubled versus Final Accent Let us examine the first disjunction in (3)--competition between doubled and final accent--in terms of the weight hierarchy in (4). In (5), we show cases from the corpus where the initial vowel is long--all fall into the doubled accent class. This is an invariable generalization: if the initial syllable contains a long vowel, then it always carries the doubled accent. This regularity accords with the generalization mentioned above that holds over the native lexicon as well. (5) a. p :n鐳iU 'Venus' :th ˈauto' py :th ˈbeauty r ːm ˈRome' y :th梡hia 'utopia' b. ph崾phA ˈpaper' p崾p ˈbaby' c. p :k巒 'bargain' th :k巘 'target' ph :kh掻 'parking' m :m噇leitU 'marmalade' k :tU課 'garden' The source of the long vowel can be a tense vowel (5a), a diphthong or a long vowel arising from loss of preconsonantal [r] (5c). Since in general final long vowels are avoided in our corpus (see below), there is no conflict between the doubled- and final-accent classes with respect to a long vowel. A second, smaller subclass of doubled-accent words comprises items whose initial syllable is closed by a consonant--usually a sonorant. We sample these items in (6)--arranged in terms of the weight of the final syllable. In (6a), the final syllable is closed by a sonorant; in (6b), it is closed by an obstruent; in (6c), the final syllable terminates in a vowel; and in (6d), it terminates in an epenthetic vowel. (6) a. rA玭dA玭 訪ondon amsUtherUd噈 訟msterdam sy噈ph巌n 討hampagne pilt扤 詁uilding 鱔c抧 訣ngine khonthUr條 詂ontrol c巒thU誰men 詆entleman h巒tU誰 訣andle hA玭th扤 訣unting r嶯kh扤 詒anking s巒t噇 詓andal ph巒t抲m 詽entium m巒syA玭 詍ansion b. 択thA玭et 詉nternet m巑pA玸ip 詍embership c. 噉t噉the 詀ndante kh梟t 詂ondo 枳phU誰le 詉nflation s抦ph梟i 詓ymphony d. khA玬ph巏thU 詂ompact 嘚kh梤U 詵ncore e. kh巔th抧 詂aptain nepkh抧 詎apkin ph噋s稀 詐op song khakth巎l 詂ocktail sy梡ph扤 詓hopping sy梜kh扤 詓hocking Here competition with the final accent class is possible. When a tie occurs and both the initial and the final syllables are closed by a sonorant, initial accent predominates: our corpus has just the three items listed in (6a) (訟msterdam , 詁uilding , and 詂ontrol) where accent falls on the final syllable.

the initial syllable is closed by an obstruent (6e), competition with final accent is greater (though the number of examples in our corpus is so small that it is unclear how much stock can be placed in this particular case): 討aptain and 許op song have doubled accent, while 詎apkin and 討ocktail have final accent. Finally, when the initial syllable is open CV or epenthetic, the word never falls into the doubled class. To summarize: The rule that words with an initial-syllable long vowel fall into the double- accent class is automatically extended to the adaptation data. The doubled- accent pattern is never applied to words with an initial light open syllable even though words with this accentual structure form a substantial part of the NK native lexicon. For example, N.-J.Kim (1997:108-109) lists 80 monosyllabic words belonging to the doubled accent class. Sixty of these contain a short vowel (e.g. k 訣ar , k -k nom., k梩 詐lace , k梥- nom.) while only 20 have a long vowel (e.g. m : 詅alcon , m :-k nom., p :m 詓nake , p :m Thus, in terms of frequency, there are many more instantiations of the doubled accent in words with a short vowel. But this accent pattern is never extended to the adaptation data: only the pattern of the numerically smaller class of long-vowel stems is. Why this discrepancy? The answer presumably is that accent is predictable for the long-vowel words. Given that the lexicon only records unpredictable, distinctive information, the language learner is forced to posit a rule (or constraint ranking in Optimality Theory (OT)) that will assign (or check) an accent to long vowel words. On the other hand, short-vowel words bearing the doubled-accent pattern will have to be indicated lexically (the tonal analyses of Chung (1991) and N.-J Kim (1997) posit a floating high tone, while the accentual analysis of Idsardi & S.-H. Kim (1997) proposes a metrical bracket) since they contrast in accent with other short-vowel words: m渓, m渓- 詞ater vs. s渓, s渓-i 詞ine . However, there is one aspect of the doubled-accent pattern that does not directly reflect the grammar of NK. The rule assigning heavy initial syllables to the doubled class is extended down the weight hierarchy to include syllables closed by a sonorant (and some but not all cases of closure by an obstruent). In the native lexicon, there is no evidence that such CVR syllables are targeted by the doubled accent pattern. For example, disyllables with an initial CVR seem to be equally distributed across the three accent types: initial (p嘚ku ihock, k柄chi ihickled cabbage, m噉the ihet bag), final (tanch ihutton, nemp ihot, kamc ihotato), doubled (t噉c ihugc cічn\$ ihotato), nemp <math>ihot, kamc ihotato), doubled (t噉c ihugc ihugc ihugc ihotato), nemp <math>ihotato), doubled (t儆c ihugc ihug ihug2000) for other examples of such amergence of the unmarked effects (McCarthy & Prince 1994) in adaptations and Broselow, Chen and Wang (1998) for examples from second language acquisition. Perhaps this phenomenon indicates that the default UG setting for the weight of CVC syllables counts them as heavy. (See Rosenthall & Van der Hulst (1999) for a recent OT proposal on how to represent the weight of CVC syllables.) 2.2 Final versus penultimate accent We now turn to the competition between final and penultimate accent. Languages in which accent is located in a two-syllable window at the right edge of the word are quite common. They fall into two principal types: languages such as Chukchee (Kenstowicz 1997) and Uyghur (Comrie 1997) where the final syllable is accented unless it is light and the penult is heavy (LL , LH , H \ddot{R} , HH) and languages such as Tahitian (Bickmore 1995) where the penult is stressed unless the final syllable is heavy (L \ddot{R} , LH , H \ddot{R} , HH). Let us examine the four possible combinations of light and heavy syllables in the NK adaptation corpus to see which type better matches our data. The vast majority of items in the final-accent class have a penultimate light and a final closed syllable (as well as a light initial syllable that exempts them from the doubled accent pattern). We cite just a few examples in (7a). The number of words of this syllabic structure with penultimate accent is much smaller. We list all those we have found in (7b). Some but not all (e.g. \gtrsim estival) tend to match the accent of the English source. (7) a. allat枳 訟laddin b. eAr梡ik 詀erobic pirac抣 訠razil 巔hUl 詀pple khepin巘 詂 abinet ot抯yAn 詀udition kharam巐 詂aramel kh噒hUn 詂otton ticith噇 詃igital phesUth抪al 詅estival chenA玲 詂hannel m巆ik 詍agic khUllarin巘 詂 larinet khech嘲 訊etchup Final long vowels are quite unusual in our corpus; this gap may reflect a constraint of the language (papekhy : 詁arbecue is an isolated example and has the alternant p :p巏hyu). The compensatory lengthening from loss of coda [r] is blocked word-finally, as in: aps :pa 詀 bsorber, khareta in alendar. But the constraint against final long vowels may itself be trumped by minimality: monosyllables seem to systematically lengthen, as in siph : 'spa', sikh : 誌ki , sith : 詓tar . If this conjecture is true, such lengthening would be an "emergence of the unmarked" phenomenon (McCarthy & Prince 1994) since words of the form CV are not uncommon in the native lexicon: c 韵at , p 詁oat , kh 詎ose . Also, the epenthetic vowel apparently fails to make weight. More study of this point is clearly required. When the penult is heavy and the final syllable is light, penultimate accent is regular. (8) or巒ci 渤range hellikh梡tha 詇elicopter th巏si 詔axi khar巒ta 詂alendar th巑pho 詔empo ana渘sA 詀nnouncer inphullu巒ca 詉nfluenza aps : pa 詰bsorber We now turn to cases where final and penult have the same weight. The number of items in our corpus in which the last two syllables are heavy is limited. Both the final-accent and the penultimate- accent patterns are represented. (9) Final Penultimate khakthi 討ocktail oll抦phik 設lympic nepkh抧 詎apkin was扤thon 訵ashington khAmp巏 討omeback 巏syAn 詁ction khon巏syAn 詂onnection sUkh罃tal 詓candal When both the final and the penult are light CV, penultimate accent predominates. Some cases with final accent may be early loanwords from French (10b) that have been integrated into the native system. In opposition to this handful of LL# adaptations with final accent, our corpus includes close to thirty cases with penultimate accent (10a). (10) a. aphUrrrtha 訟frica b. pall 詁allet amerrrtha 訟merica panan 詁anana khelliphon抋 誇alifornia khamer 詂 amera sikh噆o 誇hicago opher 詏pera khollor噒o 訡olorado khomet 詂omedy phUllor抉a 訤lorida phian 詐iano miccup扭i 訫itsubishi saikh 詐sycho akses噐i 詀ccessory sin巑a 詂imema khokh梐 詂ocoa kh津hi 詂ookie hwem犭i 診amily h巔hi 訣appy hisUth巖i 訣istory air枭i 淧rony masUkh器a 詍 ascara m枳i 詍ini misith巖i 詍ystery phoph渞i 詐otpourri phothe挾ho 詐otato sophUr噉o 誌oprano sUphak巘hi 註paghetti thUr梡hi 詔rophy thAks挾o 誈 uxedo enA玞i 訣nergy pur噋o 詁ravo The preponderance of penultimate accent for the LL# cases argues that NK has the bimoraic parse of languages like Tahitian. This agrees with the default status accorded to the penultimate-accent class in the native lexicon by N.-J. Kim (1997). To summarize: When an adapted word does not fall into the doubled-accent class for lack of an initial heavy syllable, it is assigned a bimoraic foot at its right edge. The rule or constraint ranking introducing this accent is independently motivated in NK grammar by accentual alternations that arise when a polysyllabic suffix/enclitic is added to a noun stem with final accent. Also, as observed earlier, penultimate accent is invariably assigned to longer stems--stems of four or more syllables--where accent ceases to play a distinctive role. Although it may be nondistinctive here, for reasons of culminativity every lexical item is required to bear an accent. The default accentuation thus emerges in such longer words which step out from under the control of a distinctive lexical accent. Given that the English inputs are perceived to lack an accentual specification, the default accent will be assigned. As is well known, 🚈 p of the tongue and other psycholinguistic phenomena suggest that accent plays a role in lexical storage and retrieval (Cutler 1989). If experiments can be designed to detect lexical accent, it would be exceedingly interesting to bring them to bear on the accentuation of such ignore words as well as on the penultimate accent of shorter words like $k^{\text{m}i}$ illind, sort that contrast with kac illigation and k : c is in the shorter words like k is independent of the shorter words like k in the shorter words like k is independent of the shorter words like k in the shorter words like k is independent of the shorter words like k in the shorter words like k is independent of the shorter words like k is independent of the shorter words like k is independent of the shorter words like k independent of the shorter words like k is independent of the shorter words like k independent of the shorter words like k is independent of the shorter words like k independent of the shorter words like k is independent of the shorter words like k independent of the shorter words like k is independent of the shorter words like k independent of the shorter words lindependent of the shorter words like k independent of the derives the penultimate accents of both long and short words from inputs that lack an accent. But given that accent helps to distinguish short words (cf. k嘽i 註ort, kind , kac 訣ggplant), we would not be surprised if this accent is recorded in the lexicon. The issue is essentially one of radical versus contrastive underspecification; see Steriade (1995) for a recent review. 3. Additional Complications In this section, we examine three factors that impinge on the basic accent principles that apply to NK adaptations: the behavior of liquids, the treatment of diphthongs, and epenthetic vowels. 3.1 Liquids Korean has only one liquid phoneme, realized as a lateral in the coda and as a rhotic elsewhere; this gives rise to regular alternations between [1] and [r]: m噇 訣orse', m器-i nom. In our data, the adaptations of the English liquid phonemes /l/ and /r/ do not violate these constraints on the distribution of the allophones comprising the Korean liquid phoneme. But it is also clear that the adaptation is not simply a matter of identifying English /l/ and /r/ with the liquid phoneme of Korean and then redistributing the sounds in accord with Korean allophonic norms. Rather, in certain cases it appears that English /l/ and /r/ are matched with phones that fall outside the spectrum of the Korean liquid phoneme. The data are summarized in (11). (11) /l/ /r/ initial ra.枳 詌ine ra.柤U 詒ice r :cA 詌eisure r .y噇thi 詒oyalty final s善t噇 詓andal :nA 詏wner hosUth巐 訣ostel men拼A 詍 anager preconsonatal pilt抓 詁uilding p:k巒 詁argain intervocalic c巖i 詊elly a.ir梟i 詉rony c巐li phUllor挾a 訤lorida phUr嘚sU 訤rance Initial /l/ is systematically realized as [r]: ra.枳 詌ine , r :cA 甜eisure . The adaptation of English /l/ makes one maneuver in order to remain faithful to the source language but still respect NK phonotactics: intervocalic [1] is often preserved by gemination: (cf. phaill裡山 詐lot ,pUlla抧tU 詁lind ,kUll鏿U 詆love and c巖i c巋li 'jelly', kUr噑U kUll噑U 詆lass . It is interesting that the closed syllable resulting from liquid gemination does not contribute to weight. There are no cases in our corpus in which a word is assigned to the doubled -accent class in virtue of its initial syllable being closed by a geminate [1]. All words of this structure have final (khallA班 'column', hallok巒 'halogen', sillikh梟 'silicon', allat扨 Aladdin') or penultimate (oll扬phik 'Olympic', khollor噒o 'Colorado) accent. On the other hand, coda [1] counts as heavy for the final accent class, as expected (ticith噇 'digital', isUra巐 'Israel', pUrac抣 'Brazil', phisUth條 詐istol). There is thus a mismatch between the phonotactically and prosodically motivated syllabifications: the closed syllable arising from gemination of the intervocalic lateral does not count for weight. When the English source word has a rhotic in a closed syllable, it is realized as lengthening of the preceding vowel. This length normally counts for weight in the assignment of the doubled accent: p :k 巒 'bargain', kh :tU 'card', k :tU課 'garden', h :m泉i 'harmony', m :k 器in 'margarine' versus p :ti 'birdie' (golf). A few items have doublets: 'mark' belongs to either the doubled (m :khU) or the penultimate (m :khU) class; in 'carpet' when the /r/ is realized as length the accent is doubled (kh : p巘), othwerwise it is penultimate (khaph巘hU). These data indicate that to Korean ears English coda /r, (an approximate) sounds closer to zero than to /l/. Given the absence of falling sonority diphthongs in the language, a glide-like realization is precluded, making zero the closest option. This interpretation is supported by the few examples in our corpus of coda rhotics from other languages with different, more salient realizations. They are adapted as as onset [r]: rarU誯o 詌argo , perUsa抷u 訴ersailles, korUpach梡hU 訥orbachev . In the light of the Another the of the Another the Anot final point. In NK a long vowel occurs only under accent; in cases where coda [r] deletes but accent falls elsewhere, the syllable is realized with a

Thus, in khalliphon 抋 'California', there is no lengthening by /r/ since it appears neither in the initial syllable nor inside the disyllabic window at the right edge of the word; compare the length in sUkh ; phU 'scarf' and sUkh ; thU 😹 it , where penultimate accent may reach the syllable with an underlying /r/. 3.2 Diphthongs Korean lacks falling sonority diphthongs with an off-glide (except possibly for [Uj]). In general, English diphthongs of this structure are realized as two separate syllabic nuclei. The normal accent assignment then takes place. We illustrate first with [ai], [au], and [oi] diphthongs. (12) a.i.r .ni 'irony' ma. .khU 'mike' ma.i.n .sU 'minus' ma. .sU 'mouse' ra.i.梟 'lion' o.药 'oil' An exception is the diphthong [ej]. In many cases, it is realized as a diphthong in our data (in which case it counts as a long vowel for the doubled accent pattern) in other cases, it is treated heterosyllabically. (13) p崾.p 'baby' th崾.pU誰 'table' kh崾.pU誰, 'cable' ph崾.phĀ 'paper' khe. .pUl che.枳.ci 詂hange . thU 該ate 3.3 Epenthetic Vowel Next, we turn to the epenthetic vowel. It is well known that epenthetic vowels often shun accent (Broselow 1982) but count for defining a disyllabic window (Alderete 1999; Shinohara 1997a,b, 2000). Let us survey the NK adaptation data with this phenomenon in mind. First, the maximal syllable template in Korean is CVC--the language scrupulously avoids complex onsets or codas. Initial and final clusters are broken with epenthetic vowels. Furthermore, there are rigid restrictions on codas: in the adaptation process these coda conditions may force a preconsonantal or word-final consonant that would otherwise enter the coda into the onset by epenthesis, where it can be pronounced. For example, coda consonants are unreleased and exclude a [+continuant] (C.-W. Kim 1970). Thus, underlying /s/ is realized as a stop [t]: /nas/: n噒 誌ickle , but n噑-U誰 acc. In order to preserve the [+continuant] of the source word, foreign words ending in [s] are systematically adapted with an epenthetic vowel: c :sU U 諏lass , p窓U 詁oss . An epenthetic vowel occupying the initial syllable never takes the accent. But in order to know whether it is actively avoided by the accent ,we need to make it the target of penultimate accent. (It canix be the target of the doubled accent since it is not long.) But to make this test, the final syllable must be light. Unfortunately, because of the minimality phenomenon, words such as 'ski', 'spa', and 'star' have a final long vowel that takes the accent: sUkh :, sUth :, sUth :. Thus, we cannot tell if initial-syllable epenthetic vowels avoid the accent on purpose. In any case, they do count for licensing the doubled accent because a long vowel that would otherwise willingly enter the doubled class cannot do so when it is displaced from the left edge of the word by epenthesis: compare kUr :sU 'Greece' vs. r :cA illeisure . A final epenthetic vowel never takes the accent but it may serve as the second member of the doubled accent when the first syllable is long (14a); a medial epenthetic vowel behaves the same way (14b) (14) a. c : sU 詳uice b. sA玁kU誶asU 'sunglasses' k : ltU 詆old :sU誸hUria 'Austria' kh :t 'card' wA :lt 'world' Consequently, if the doubled accent is the product of a rule or constraint associating a HH pitch accent from the left edge of the word with an initial-syllable long vowel, then epenthesis must apply prior to this process for two reasons: it displaces a long vowel from the left edge of the word (kUr :sU inrece) and it supplies a vowel that may carry the second high tone (c :sU 詳uice). Finally, there are cases of a medial cluster where the penultimate vowel is epenthetic. Here we find mixed behavior. In some cases, the accent fails to land on the epenthetic vowel and targets the final vowel instead (15a); but in others the epenthetic vowel is accented (15b). We suspect that many of the latter are older loanwords that have been more fully integrated into the system; their vowel may no longer be treated as inserted and hence they naturally take penultimate accent. (15) a. nigUr 詎egro b. allekU誶o 詁llegro 詍etro kharisU睫a 詂harisma pakU課a 訵agner kUrisU誸o 訡hrisť If more cases like (15a) can be identified, then we will apparently have the phenomenon identified by Shinohara (1997a,b; 2000) for Japanese adaptations where an epenthetic vowel counts for defining the disyllabic window necessary for accent but itself repels the pitch peak. Further study of this point is clearly necessary. An additional complication is presented by cases in which the foreign source terminates in an /st/ or /ft/ cluster (16). (16) th 察UthU 詔oast th 巏sUthU 詔ext p 巗UthU 詁est k 抪hUthU 詆ift r 巔hUthU 詌eft phA玸UthU 詅 irst Here two vowels are inserted - one to realize the fricative in an onset and the other to realize the following stop. In this case, the accent rejects both epenthetic vowels and shifts leftward outside the final disyllabic window in order to find an underlying vowel. This suggests that while epenthetic vowels count for determining the window in which accent is realized, they are avoided as bearers of accent in favor of underlying vowels--a phenomenon more robustly attested in Japanese. In sum, our data conform to Shinohara 誷 (1997a) and Steriade誷 (1999) hypothesis that as a repair strategy, epenthesis typically chooses the vowel from the phonemic inventory that is perceptually least salient. The principle of minimal saliency explains why epenthetic vowels (employed in adaptations) are typically those with the shortest duration and most acoustic overlap. This holds for Japanese (Keating & Huffman 1984) and presumably for Korean as well. The principle also explains why epenthetic vowels tend to coarticulate with adjacent (especially preceding) consonants rather than augmenting syntagmatic contrast: witness p : ch 詰each and pUrA玔s裓i 詰rush with epenthetic [i] after palatals. It also seems clear that accent increases the saliency of a vowel and hence is incompatible with epenthesis. Finally, we observed two cases of epenthesis tht do not contribute to prosodic weight and hence also conform to the principle of minimal saliency. First, the epenthetic vowel breaking initial sC clusters in monosyllables fails to suppress lengthening of final vowels to satisfy minimality: sUki: 註ki . Second, the closed syllable that arises from the gemination of laterals does not count as heavy for the double-accent assignment khallA諌 詂olumn . 4. Role of the Citation Form Kenstowicz (1996) calls attention to asymmetries in the phonology of nominal versus verbal forms in Korean. In particular, nominal stems ending in a cluster are being reanalyzed by the younger generation of Korean speakers as terminating in a single consonant (tak 詂hicken, tak-i < talk-i nom.) while verb stems exhibit no tendency to restructure (cf. palk-ass-A mas bright). The different phonological behavior of nounsand verbs is to be traced to the morphology of Korean. Nouns may occur in isolation without a case marker, in the citation form; they may also omit structural case markers in the sentence under poorly understood conditions. When they do so, they are subject to various phonological neutralizations that bring them in line with the language \mathbb{H} CVC maximal syllable template. The phonological simplifications in inflection such as tak-i < tak-i and tak-i nom. arise from analogizing the inflected form to the citation form of the noun for various structural properties -- an effect dubbed "base-identity" and conceived of as an output-output faithfulness constraint active in the grammar (as opposed to a principle of the learning system formally unconnected to the computation of input-output mappings). Verb roots do not behave in the same way because they require an inflection and hence are not subject to the neutralizing effects arising in the bare citation form. Owing to this difference in the morphology, gross disparities are being introduced into the phonological structure of noun versu verb roots. In the traditional generative model, the only tool available for expressing systematic relations between one word and another is the phonological cycle. But in this case, the cycle is of no use because there is no motivated way in which the root can anticipate whether or not it will occur without a suffix. Consequently, no formal connection can be drawn between differences in the shape of noun versus verb roots and the parallel difference in morphological structure. Kang (1992) documents additional nominal versus verbal disparities of this form. See also Lee (1999) for recent discussion. 4.1 Accentual Alternations In our accentual data, there are a couple of circumstances in which alternation is eliminated in order to remain faithful to the citation form. To understand their significance, we must consider them in the light of alternations occurring in the native system. The latter are usefully tabulated in terms of the three categories nonfinal, final (oxytone), and doubled accent. (17) a. nonfinal: n漆a 'older sister', m il 'garlic', n噐a 詂ountry , mA玶a 詇ead b. final: toNs嶯 'younger sibling , nam渓 'vegetable', yur 詆lass , nam 詔ree c. doubled: 梡p 詏lder :nkyA玁 訣ye-glasses The data in (18) show the accentual alternations that arise when words from the various accentual brother , kU誶抦 'picture', categories are combined into phonological phrases (see Kenstowicz & Sohn 1997, Kim, N.-J. 1997, and Kim, S.-H. 1999 for recent discussion of Korean phrasing). We mark the locus of the phrasal accent with underlining. Lexically accented syllables that do not fall under the phrasal accent have small FC perturbations that speakers are normally unaware of (Kenstowicz & Sohn 1997). The phrasal peak extends over both components of the double accent. (18) n 揉a m噉Ul 'sister's garlic' n渘a nam渓 'sister's vegetable' n渘a kU誶抦 'sister's picture' 梡p n噉Ul 'older brother's garlic' 梡p nam渓 'older brother's vegetable 祝p kU評抦 'older brother's picture' toNs嶯 m噉Ul 詙ounger sibling誷 garlic' toNs嶯 nam渓 詙ounger sibling調 vegetable' toNs嶯 kU訊 抦 詙ounger sibling調 picture' In general, the accent of the phrase (line-2 grid mark) is projected from the first member of the phrase (in OT terms, Leftmost >> Rightmost). But words such as toNs 嶯 詙ounger sibling with final accent in their bare form yield the phrasal accent to the following member of the phrase: toNs蟲 m噉Ul 誠ounger sibling調 garlic', toNs蟲 nam渓 誠ounger sibling調 vegetable'.In other words, a word-final phrase accent is only licensed at the right edge of the accentual phrase. From a crosslinguistic perspective, we might make better sense of this alternation as follows. In pitch accent systems such as NK, the locus of accent is cued by a drop in pitch (phonologized as a HL pitch accent). A word-final (monomoraic) syllable is not the optimal site to realize such an accent (recall that Japanese speakers fail to interpret French words as having a final accent). We will assume here that this phenomenon can be subsumed under the familiar Nonfinality constraint of Prince & Smolensky (1993) but that Nonfinality is overridden before a stronger prosodic boundary where juncture lengthening adds a (silent) beat (Selkirk 1984), rendering the accent nonfinal (see C樋 1999 for recent discussion of such boundary effects.) [2] The following tableaux indicate the intended analysis. The x denotes the phrase final juncture beat. (19) /n渘a m噉Ul / Leftmost Rightmost \$ n渘a m噉Ul x * n渘a m噉Ul x *! / toNs嶯 m噉Ul / Nonfinality Leftmost toNs嶯 m噉Ul x *! \$ toNs嶯 m噉Ul x * / toNs 嶯 nam渓/ Nonfinality Leftmost toNs嶯 nam渓 x *! \$ toNs嶯 nam渓 x * There is one exception to the avoidance of word-final phrase-medial accent, however. When the following word in the phrase belongs to the doubled-accent class, it throws the phrasal accent back to a preceding oxytone: toNs嶯 kU評抦 詙 ounger sibling picture . We see this alternation as a clash resolution strategy invoked when a final accent is followed by the doubled accent. There are various ways in which the resolution can be expressed depending on how the doubled accent is represented. For concreteness, we will assume here that it is a [HH] pitch accent. Nonfinal pitch accents on words such as m噉Ul 詆arlic are [HL], while the pitch accent associated with a phrase-medial oxytone such as nam渓 誠egetable is just [H] (Kenstowicz & Sohn 1997). The combination of an oxytone plus a doubled accent thus creates three successive Hs. Evidently, the clashing H#HH is resolved by switching the second H to L with repulsion of the phrasal prominence. The intended analysis is sketched in (20) * * * * * (20) to Ns $\stackrel{\text{\tiny IB}}{=}$ $U^{\frac{\text{\tiny IB}}{=}}$ $U^{\frac{\text{\tiny IB}}{=}$ $U^{\frac{\text{\tiny IB}}{=}}$ $U^{\frac{\text{\tiny IB}}{=}}$ $U^{\frac{\text{\tiny IB}}{=}$ $U^{\frac{\text{\tiny IB}}{=}}$ $U^{\frac{\text{\tiny IB}}{=}$ $U^{\frac{\text{\tiny IB}}{=}$ $U^{\frac{\text{\tiny IB}}{=}$ $U^{\frac{\text{\tiny IB}}{=}$ $U^{\frac{\text{\tiny IB}}{=}$ $U^{\frac{\text{\tiny IB}}{=}}$ $U^{\frac{\text{\tiny IB}}{=}$ $U^{\frac{\text{\tiny IB}}{=}}$ $U^{\frac{\text{\tiny IB}}{=}$ $U^{\frac{\text{\tiny$ (20) toNs嶯 kU評択ta -> toNs嶯 kUr抧ta | | | | | H H H H L H The alternations in (18) are the by -products of a complex diachronic evolution (Ramsey 1975). In general, the locus of accent retracted one syllable in the evolution of NK from Middle Korean (MK). The South Hamkyung (SH)

dialect of North Korea more faithfully reflects the original place of accent: compare SH kamakw raven'. atU誰 son, and kam渓chi 'mullet' vs. NK kam唱 wi, 噒Ul, and k噈ulchi. This change should have merged the distinction between original initial s調s... and peninitial ss調... accent. However, the contrast was preserved by assigning the former class of words to the doubled accent class: cf. SH m 梜i 'mosquito' and t梜kepi 'spirit' with NK m梜 , 巅i. The doubled accent, which is an innovation of NK, had an independent development from initial long vowels: compare NK s :r噈 'person' with (conservative) Seoul sa:ram. The latter is the source of the synchronic NK implicational relation between length and the doubled accent. Finally, the NK oxytones correspond to MK unaccented forms. Being unaccented, they naturally escaped accent retraction. Our synchronic analysis outlined above rests on the assumption that there has been considerable restructuring of the diachronic source grammar. 4.2 Accentual Stability We now turn to the behavior of accentual adaptations with respect to the system just outlined. In general, adapted forms behave parallel to native ones with two interesting exceptions. First, final-accented words in our corpus systematically fail to shift their accent to the right in the phrase. This phenomenon was observed independently by M. Kim (1997). (21) kharam巐 'caramel' cf. nam渓 'vegetable' kharam巖-i nom. nam渞-i nom. kharam巐#c檔ha 訣ven a caramel nam渓#c檔ha 'even a vegetable' kharam巐 mAkn騨ta 'eats caramel' nam渓 mAkn騨ta 'eats vegetable' p巐 詁ell s渓 'wine' p巖-i nom. sǚ-i nom. p巐#c檔ha 訣ven a bell s 渓#c檔ha 'even wine' p巐 s梤i 詁ell誷 sound s渓#c抪 詗ine house (cf. s梤i 誌ound (cf. c抪 訣ouse allat抧 訟laddin toNs嶯 誌ounger sibling allat抧-i nom. toNs嶯-i nom. allat抧#meNk渞o 詌ike Aladdin toNs嶯#meNk渞o 詌ike younger sibling allat抧 n渘a 訟laddin誷 sister toNs嶯 n渘a 詙ounger sibling誷 sister' In order to explain this phenomenon, we speculate that in the process of adaptation the citation form has a special status as the gateway through which lexical items enter the native system. In effect, the NK grammar cannot parse English sentences to extract English words. They can only enter the NK system if they are preparsed in the citation form. If this point is granted, then the otherwise peculiar behavior of the adapted forms begins to make some sense. In the case of the oxytones, we recall that they were claimed to escape Nonfinality at the end of the phonological phrase in virtue of the junctural beat that renders them nonfinal. The citation form is a phonological phrase unto itself and so can be expected to inherit characteristics of phrase-terminal position. It lacks case marking and the copular verb is normally omitted as well, so that the noun stem appears flush against the end of the phrase. We suggest that an output-output faithfulness constraint analogizing adaptations with repsect to the junctural beat buffers the accent of kharam巐 from the end of the word allowing it to satisfy Nonfinality. In effect, it passes into the nonfinal accent class of (17a). If two adaptations with final accent form a phrase, then lower-ranked Leftmost >> Rightmost selects the candidate with initial accent: allat枳 kharamel 'Alladin's caramel The tableau in (22) indicates the intended analysis. (22) /p巐 s梤i/ Base-Id Non-Fin Leftmost \$p巐 x s梤i x p巐 s梤i x *! * The second case in which the Base-Identity phenomenon affects accentual adaptations concerns the doubled accent pattern. We first examine the phrasal behavior of native items in this category and then look at adaptations. In the native NK system, monosyllables readily populate the double-accent class which, as noted earlier, contains specimens with both long and short syllables. They regularly realize their second accent on the following syllable in the phrase, be that an inflection, an enclitic, or another freestanding word. (23) t :n 'money' m :l 'word' t :n- nom. m :l- nom. t :n#m載k渞o'like money' m :l#p裡a 'than a word' t :r c渘t 詆ive money m :l h噉t 詍ake word (speak) cf. c渘t 詆ive cf. h噉t 詍ake m渓 'water' s梟 'hand' m渞- nom. s梟- nom. m渓枷嶯k渞o'like water' s梟#p梩a 'than a hand' m渓 m鏺n騨ta'consumes water' s梟 c噋n騨ta 訣old hands Several other tonal processes that diagnose nouns in the doubled pattern. The most interesting is the accent shift from oxytones mentioned earlier. As we noted, it is suspended before a doubled accent--both polysyllabic ones such as k騬抦 ' picture' (which display their doubled accent overtly) and monosyllabic ones such as t :n 'money' and m渓 ' water' (which display their doubled accent covertly). (24) toNs嶯 k騬抦 詙ounger sibling調 picture' (cf. k騬抦 'picture' toNs嶯 t梟 詙ounger sibling調 money' (cf. t :n- 詍oney nom. toNs嶯 m渓 詙ounger sibling調 water' (cf. m渓- 詞ater nom. cf. toNs嶯 s渓 詙ounger sibling調 wine (cf. s渞-i 詞ine nom. The behavior of doubled accent monosyllables such as t :n 詍oney and m渓 詞ater in (24) is puzzling. If we are correct that the retraction of the phrasal accent to the oxyton in toNs 巢 k騬扬 'brother's picture' is due to the deletion of the second of three successive accents (recall 20), then how can a monosyllable contribute two accents? One possibility is that the silent beat posited at the end of the phonological phrase supports the floating accent. We, however, prefer to see this as a parallelism effect. In all other contexts, t :n and mig display two accents and hence set up the clashing environment H#HH when preceded by an oxytone. Evidently this property is carried over to phrase-final position by analogy--a uniformity effect discussed under the label of Metrical Consistency in Burzio (1994), Paradigm Uniformity in Flemming (1995), Uniform Exponence in Kenstowicz (1996), and Lexical Conservatism in Steriade (1998). Let us now consider how adaptations fare with respect to these native patterns for the doubled accent. Adaptations with an overt doubled accent behave in totally parallel fashion, blocking the shift of accent from an oxytone by clash resolution: H#HH -> H#LH. (Long vowels are only realized in the initial syllable of the phonological phrase, hence the shortening of :th 詂ar in toNs嶯 otho 詙ounger sibling調 car'.) (25) toNs嶯 kh梟t 詙ounger sibling調 condo' (cf. kh梟t 'condominium' toNs嶯 p崾p 詙ounger sibling調 baby' (cf. p崾p 'baby' toNs嶯 梩h 詙ounger sibling調 car' (cf. But adapted monosyllables with a long vowel systematically fail to double their accent before an inflection or in the phrase. (26) th :m 'team' p :m 'boom' th :m-i nom. p :m-i nom. th :m#meNk渞o 'like a team' p :m#meNk渞o 詌ike a boom' th :m mant騨ta 詍ake a team p :m mant騨ta 討reate a boom th :p 'tip' th :p-i nom. th :p#meNk渞o 詌ike a tip th :p c渘t 諏ive a tip This behavior suggests that th :m belongs to the single accent class of o 抪 訣ouse and p巐 詁ell discussed earlier despite the long vowel that should otherwise place it in the doubled class of t :n 詍oney . This interpretation is confirmed by the failure of these words to repel the accent of an oxytone (27a). (27) a. toNs嶯 th :m 詙ounger sibling's team' yAnghw p:m 'movie boom' (cf. yANhw 'movie' b. toNs嶯 c抪 詙ounger sibling's house' c toNs嶯 t梟 詙ounger sibling's money' toNs嶯 m渓 詙ounger sibling's wate Why should th :m 詔eam be assigned to the c抪 訣ouse accent class in spite of the long vowel that should otherwise place it in the double-accent class of to:n 詍oney ? If the monosyllables t :n and mul display the 襝overt double accent by analogy to their phrase-internal form (the uniformity phenomenon) then adaptations can be expected to behave differently precisely because they lack a phrase internal counterpart (at least on initial exposure) and so there is no overt double accent for them to be faithful to. So long as Uniformity dominates the constraint that assigns a doubled accent to an initial syllable long vowel, th :m will be adapted with a single accent and hence display the behavior of c抪 訣ouse and p巐 詁ell . the results of this section, while in general foreign adaptations are well integrated into the NK accent system, we have examined two situations in which the accentuation of the adapted form fails to follow the patterns expected on the basis of the native system. Both seem to involve the analogical influence of the citation form of a noun on its accentual shape under inflection, cliticization, or phrasal complementation. In the case of kharamä, phrase medial form mimics the silent beat of the phrase-final form, rendering the accent nonfinal. In the case of th :m, the otherwise valid uniformity effect that supplies a double accent to a final monosyllable on the basis of its phrase-medial form is inapplicable because for adaptations, the phrasemedial forms are faithful to the citation form and not vice versa. An alternative interpretation of these facts attributes the special behavior of th : I 'team' and kharamia ' caramel' to their underlying representation. On this scenario, the speaker will posit the covert double accent for a monosyllable like th : monly if there is direct support from a paradigmatically related form. Since this evidence is lacking in the case of in-line adaptations, the underlying form is taken at face value from the citation form, contravening the otherwise unviolated phonotactic constraint that long initial syllables have the doubled accent. In order to extend this line of reasoning (essentially Kiparsky調 1968 Alternation Condition) to oxytones like kharam巐, we might treat this class as underlyingly unaccented (following the apparent Middle Korean source). The idea would then be that in the face of a final accent., the speaker has two choices: take it as underlyingly unaccented (whence, on this analysis, the apparent shift of accent in inflection) or treat it as accented. The former analysis requires a departure from the surface shape of the citation form and hence, on this scenario, is only motivated by positive evidence from alternations in inflection. But once again such evidence is precisely what is missing from the adaptation situation; hence, kharam is taken at face value and treated as accented. While we believe that this line of reasoning has some merit, it fails to provide a general account of the adaptation situation. In the next section we examine two cases from the segmental phonology of Korean adaptations that are problematic for this point of view. 5. The Adaptation of Stops In the adaptation of English words, the voiceless vs. voiced contrast in stops is treated as a plain vs. aspirated distinction in Korean: p鐳U 詁us vs. ph巗U 詐ass . Korean stops contrast for [盿spiration]; unaspirated stops are regularly voiced in intersonorant position (though native speakers are normally unaware of this allophonic change). The opposition for aspiration is neutralized in syllable codas, which are unreleased (C-W. Kim's 1970 "principle of closure"): cf. ip, i[b]-i 'mouth' but ap, aph-i 'inside'. When faced with an English word ending in a stop the Korean speaker has two options. The [Foice] opposition can be preserved and expressed as [Expiration] by placing the stop in the onset of an epenthetic syllable. Alternatively, the gross syllabic profile of the source word can be maintained at the cost of neutralizing the voicing distinction For many words, both options are available; for others, the choice seems lexicalized in favor of one option or the other. [4] (28) Citation form Nominative khe. .khU khe. .khU-ka, *khe. .kU-ka 'cake' khe.択 khe. .k-i, *khe. .kh-i 'cake' th梜 th梜-i, *th梜U-ka, *thokh-i 詔alk m錢U m錢U-ka, i 'mug' The significant point for our purposes is the following. Once a choice has been made for the citation form, the inflected and phrasal forms must follow suit. Thus, given th梜 'talk', aspiration may not be restored in *th梜h-i or *th梜hU-ka. And given m錣U 'mug', the inflected form must be faithful to the bare form and retain the epenthetic vowel: m鐵U-ka, *m鐵-i. Finally, in adaptations such as 'cake' that allow both options, a mixed form that lacks the epenthetic vowel but restores the aspiration is judged as sharply ungrammatical: *khe. .kh-i. In this case, appeal to a learning strategy requiring positive evidence from alternations to justify an underlying representation that departs from the surface citation form is inadequate as an explanation for the base-identity effect. While positive evidence from alternation may be required in order to assign the doubled accent to th :m, the Korean speaker adapting 'cake' clearlyalready knows that the final voiceless stop-equated with aspiration. Nevertheless, it can only be realized, via the citation form, in the onset of an epenthetic syllable; and it is this realization that is the basis for extension to inflection and phrasal modification via the Base-Identity constraint. A second case in which taking the isolation form as equivalent to the input fails to provide the proper

coverage concerns nouns that end in a coronal stop. Like the standard Seoul dialect, NK contrasts coronal stops and affricates for glottalization and aspiration. As mentioned earlier, coda consonants in Korean are unreleased leading to neutralization of laryngeal distinctions as well as change of the continuant [s] to [t]. (29) Citation form accusative /nac/ n噒 n嘽-騦 該aylight /nach/ n噒 n嘽h-Ul 詅ace /nas/ n噒 n嘷- 騦 誌ickle /muth/ m渢 m渢h-Ul There is an interesting gap in the lexicon with respect to this neutralization: while verbal and adjectival stems ending in /-t/ abound (mit- 計 elieve, tot- 詒ise, kut- 訣ard), there are no noun stems that terminate in /-t/ in their input form. Stated differently, we know of no Korean noun that ends in [t] in the isolation form and that remains unchanged (except for allophonic voicing) before a vowel-initial inflection. The absence of nonalternating [t]-final noun stems is unusual; [t] is the unmarked coronal obstruent and hence should be selected before a marked one is. Furthermore, according to the Alternation Condition (Kiparsky 1968), in conditions of neutralization when the inflected form is not known or remembered, the surface form is normally taken at face value and becomes the basis for the underlying representation. One might conclude that the absence of noun stems ending in /t/ reflects an accident of the history of the language that is of no synchronic linguistic significance. If this is so, then we have every reason to expect that when nouns are adapted into Korean, stems ending in [t] should readily fill this lexical gap. The surprise is that this is not what happens. Adapted forms respect this restriction on the lexicon too. Let us see some examples. (30) Citation form Nominative kh 巘hU, kh 巘 kh 巘hU-ka, kh 巗-i 訥at thikh巘hU, thikh巘 thikh巘hU-ka, thikh巗-i 詔icket phaill梩hU, phaill梩 phaill梩hU-ka, phaill梥-i 詐ilot s抧p噒U, s抧p噒 s抧p噒U-ka, sinp噑-i 許inbad halli渢U, halli渢 halli渢hU-ka, halli渟-i 訦ollywood In these adaptations the laryngeal features of the final dental stop either are preserved in the onset of an epenthetic vowel (kh巘hU) or are neutralized in order to remain faithful to the gross syllabic profile of the English source (kh巘). When the latter path is chosen, the corresponding inflected form must end in [s]: kh巘 (citation), kh巘-i (nom.), kh巘-e (dat.) is strongly rejected as a possible noun inflection. The otherwise peculiar but systematic change of [t] to [s] found in the adaptation of foreign words ending in [t] and [d] in (30) now makes sense if the gap in the native lexicon noted above (no noun stems ending in /t/) is also imposed on adapted forms. Given that /t/ is barred from the input, the closest related sound is substituted: evidently, /s/ is chosen over the affricate /c/ or aspirated /th/ on grounds of markedness. It remains to be seen whether the ban on nominal stems ending in /t/ can also be explained in terms of the influence of the citation form. We leave this as a task for future research. See Sohn (1999) for discussion. 6. Summary In this paper we have examined adaptations that foreign words (principally of English origin) experience when they are integrated into the lexicon of North Kyungsang (NK)Korean. Our discussion concentrated on changes in accentuation. Two major patterns were distinguished: adaptations in which the initial syllable of the output is heavy (long vowel or closed syllable) are assigned the doubled accent pattern in which the first two syllables carry a pitch peak. The long vowel cases conform to a systematic generalization of NK grammar while the extension to closed syllables is an emergent property that may reflect the UG default status of closed syllables as heavy. Remaining words are assigned a bimoraic trochaic foot at their right edge. Here as well, closed syllables count as heavy (in contrast to NK grammar). As in Japanese, the bimoraic foot at the right edge of the word is the default accent assigned in NK grammar when the word lacks a lexical accent (stems of four or more syllables and enclitics). The discussion then shifted to several factors that impinge on the accent of adapted words: the treatment of liquids, diphthongs, and epenthetic vowels. Next, we considered the special status of the citation form in constraining the accentuation of adapted nominals. Oxytones and monosyllables containing a long vowel fail to alternate in the manner of native words, contravening otherwise exceptionless generalizations. Two explanations were considered: an Output-Output faithfulness constraint (Base-Identity) analogizing the inflected form to the citation form and Kiparsky調 (1968) Alternation Condition requiring the underlying input form to mimic the surface form in the absence alternations. The final section considered the adaptation of final stops in the light of these two proposals. Even though the speaker knows that the adapted form ends in a voiceless aspirated stop in the English source, this sound is nevertheless barred from surfacing in inflection. This makes sense under an Output-Output faithfulness constraint but is inexplicable in terms of a constraint on the selection of the input form. In the case of nouns adapted with a final [t] in the citation form, it was found that they systematically alternate with [s] in inflection and thereby conform to a gap in the lexicon: no nominal stems terminating in /t/. This is a striking violation of the spirit of the Alternation Condition. It is unclear whether it makes sense in terms of Base Identity and was left as a challenge for future research. Finally, a word of caution is in order. The results reported here are preliminary: the study is based on a corpus of just 600 items. Further data collection is needed to corroborate our findings and to tie up loose ends. We hope this study will encourage more phonologists to take up the study of adaptations; they provide a potentially rich source of evidence on the language specific and universal grammatical determinants of phonological form. See Paradis & LaCharit (1997) and Paradis & Prunet (2000) for recent discussion of loanword phonology from this general perspective. Footnotes *We thank Sang-Cheol Ahn, Yoonjung Kang, Sun-Hoi Kim, Carole Paradis, Shigeko Shinohara, and Cheryl Zoll for helpful comments. The first author has many fond memories of teaching the MIT Field Methods course 24.942 with Ken Hale. One of the most successful classes (1995) was on Korean and stimulated us to begin working on Korean accent. We are especially pleased to be able to offer this paper in tribute to our esteemed colleague. 1The second author of this paper assigns 詆uitar and 詔oken to the doubled class: k :th , th :kh騨. 2 Monosyllabic case suffixes and enclitics preserve accent on the stem while polysyllabic ones generally attract the accent from the stem: cf. satal illadder , satal ka 詎om ., satal -tAl pl., vs. satali-meNk消o 詌ike a ladder , satali-pot : 詔han a ladder . There are additional complexities discussed in N-J. Kim (1998: 80-93). We shall assume here that the monosyllabic particles are incorporated into the prosodic domain of the stem rendering the accent nonfinal. 3. The words in (10b) such as pall 👬 allet ending in an accented vowel do shift their accent and hence contrast with cases like nikUr 詎egro and methUr interview where accent is stable. This contrast supports the idea that the former have been nativized and no longer recognized as loans. 4 The nominative case suffix has two allomorphs: -ka after a stem ending in a vowel and -I after a stem ending in a consonant. References Ahn, Sang-Cheol. 1998. An introduction to Korean phonology. Seoul: hanshin Publishing Co. Alderete, John. 1999. Head-Dependence in Stress-Epenthesis Interaction. In Ben Hermans & Marc van Oostendorp (eds.), The Derivational Residue in Phonology, 29-50. Amsterdam: John Benjamins. Bickmore, Lee. 1995. Refining and formalizing the Tahitian stress placement algorithm. Oceanic Linguistics 34: 410-442. Broselow, Ellen. 1982. On predicting the interaction of stress and epenthesis. Glossa 16.115-32. Burzio, Luigi. 1994. Principles of English Stress. Cambridge: Cambridge University Press. Comrie, Bernard. 1997. Uyghur phonology. A. Kaye, ed. Phonologies of Asia and Africa, vol. 2.913-28. Eisenbrauns: Winona Lake, Indiana. C檛, Marie H巐弉e. To appear. 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